

### REMARKS/ARGUMENTS

The claims are 4 and 9-22.

Claims 1-3 have been canceled in favor of new claim 17 to better define the invention. Accordingly, claim 4, which previously depended on claim 2, and claims 9, 11-14 and 16, which previously depended on claim 1, have been amended to depend on new claim 17. These claims and claims 10 and 15 have also been amended to improve their form or to delete reference numerals. In addition, claims 5-8 which the Examiner withdrew from consideration as directed to a non-elected species have been canceled without prejudice to their presentation in a divisional application, and new claims 18-22 have been added.

FIG. 1 has been amended to provide corrected cross-hatching of bellows 11, and new FIGS. 3-8 have been added. New FIGS. 3 and 4 indicate the operational incline angle (FIG. 3) and the installation incline angle (FIG. 4). New FIGS. 5 and 6 show the bellows 11 fixed on the inner hub 2 by a strap 12a (FIG. 5), and the bellows 11 fixed on the inner hub 2 by a spring ring 12b (FIG. 6), as recited in claim 11. New FIG. 7 shows the bellows 11 drawn onto the inner hub 2 by a sheet-metal ring 12c as

recited in claim 12, and also shows the carrier housing 9 connected with a shaft 19 as recited in claim 16. New FIG. 8 shows the outer hub 4 connected with a shaft 19 as recited in claim 16.

The specification has been amended to refer to the new drawing figures and to provide antecedent basis for the subject matter of claims 11-13 and 16 in the detailed description portion of the specification. The specification has also been amended to include the effective date of the standard applied in determining the Shore hardness. An amended Abstract has also been provided.

Support may be found, *inter alia*, in the disclosure at pages 4 and 7-9 and the original claims and drawings. Reconsideration is expressly requested.

The drawings were objected to as failing to show the following features recited in the claims:

1. The angles recited in claim 4;
2. The strap and spring ring recited in claim 11;

3. The sheet metal ring recited in claim 12; and

4. The shaft recited in claim 16.

In addition, FIG. 1 was objected to as containing inappropriate cross hatch pattern for the rubber bellows 11.

In response, Applicants have amended FIG. 1 to provide corrected cross hatching for bellows 11, have added new FIGS. 3 and 4 indicating the operational incline angle (FIG. 3) and the installation incline angle (FIG. 4) of claim 4, have added new FIGS. 5 and 6 showing the bellows 11 fixed on the inner hub 12 by a strap 12a (FIG. 5), and the bellows 11 fixed on the inner hub 2 by a spring ring 12b (FIG. 6), as recited in claim 11, have added new FIG. 7 showing the bellows 11 drawn onto the inner hub 2 by a sheet-metal ring 12c as recited in claim 12, and also the carrier housing 9 connected with a shaft 19 as recited in claim 16, and have added new FIG. 8, showing the outer hub 3 connected with a shaft 19 as recited in claim 16. The specification has also been amended to refer to the new drawings and the items shown therein. It is respectfully submitted that the foregoing amendments

overcome the Examiner's objections to the drawings, and Applicants respectfully request that the objections on this basis be withdrawn.

The disclosure was objected to as failing to comply with 37 CFR 1.77(c) for failing to include section headings, and the Abstract of the Disclosure was objected to because it begins with a phrase that can be implied. The disclosure was also objected to because the detailed description of the invention was said to lack antecedent basis for the subject matter in claims 11-13 and 16.

In response, Applicants have amended the specification to include section headings as requested by the Examiner and have amended the Abstract to improve its form. In addition, the specification has been amended to include in the detailed description portion of the subject matter of claims 11-13 and 16, which was already described at pages 7-9 of the disclosure. It is respectfully submitted that the foregoing amendments overcome the Examiner's objection to the disclosure, and Applicants respectfully request that the objection on this basis be withdrawn as well.

The claims were objected to as failing to comply with 37 CFR 1.75(i) because elements of the claims were not separated by line indentation, and claim 9 was objected to because in line 3, the word "said" or "the" should have been inserted prior to "radially". In response, Applicants have, *inter alia*, canceled claim 1 in favor of new claim 17 and have amended claims 9-16 to improve their form. It is respectfully submitted that the foregoing amendments overcome the Examiner's objection on the basis of these informalities.

Claim 4 was rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement with respect to the recitations "maximal operational incline angle...amounts to approximately 10°" and "maximal installation incline angle is greater than 10°" which were said to be insufficiently disclosed in the specification as to how these capabilities are achieved.

This rejection is respectfully traversed.

Under 35 U.S.C. 112, the detailed description of the invention need be only in such full, clear and concise and exact

terms as to enable any person skilled in the art to which it pertains or with which it is most nearly connected to make and use the same. It is respectfully submitted that a person skilled in the art knows that the maximal incline angle of a joint is defined by the geometry of the outer and inner hubs, especially by the geometry of the tracks guiding the torque transmitting balls. By increasing the length of the curved tracks, the balls will have a larger path to roll in the tracks, which results in an increasing inclined angle. If the radius of the curvature of the tracks is a given value, the incline angle can be increased by increasing the axial length of the outer and inner hubs, thus increasing the length of the tracks.

During operation of the joint, an inclination angle which results e.g. in a contact of the outer hub with a shaft journal of the inner hub is to be avoided; however, such a contact seems to be unproblematic during installation of the joint. Further, at high rotational speeds the maximum incline angle of the bellows is limited. On the other hand, during installation of a shaft or joint, i.e. without any rotation of the joint, the bellows is capable of withstanding higher incline angles.

It is respectfully submitted that the above mentioned issues are basic knowledge to a person skilled in the development of joints and that the recitation in claim 4 that the maximal operational incline angle between the inner hub 2 and the outer hub 3 amounts to approximately  $10^{\circ}$  and the maximal installation incline angle is greater than  $10^{\circ}$  when read in light of Applicants' disclosure and drawings provides sufficient guidance to enable a person skilled in the art to achieve a homokinetic joint having these features. Accordingly, it is respectfully submitted that claim 4 is fully supported by the specification as originally filed, and Applicants respectfully request that the rejection under 35 U.S.C. 112, first paragraph, be withdrawn.

Claims 13 and 14 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. With respect to claim 13, the limitation "70 Shore" was considered to be indefinite unless the effective date of the standard applied is included in the specification, preferably accompanied by a copy of the standard or excerpts of the applicable portions thereof. With respect to claim 14, the Examiner indicated that the limitation "the side" in line 3 was unclear as to the element whose side is "the side".

In response, Applicants have amended the specification to include the effective date of the standard applied which is DIN 53505 published in 2000. A copy of a German language description of the Shore hardness test is attached for the Examiner's reference. In addition, claim 14 has been amended to specify that the homokinetic joint includes a side facing away from the bellows with a closure cover provided on the side that faces away from the bellows. It is respectfully submitted that the foregoing amendments overcome the Examiner's rejections of claims 13 and 14 under 35 U.S.C. 112, second paragraph, and Applicants respectfully request that the rejections on this basis be withdrawn as well.

Claims 1, 2, 11, 12 and 16 were rejected under 35 U.S.C. 102(b) as being anticipated by *Gees U.S. Patent No. 4,869,556*. Claims 1-3, 9-12 and 14-16 were rejected under 35 U.S.C. 102(b) as being anticipated by *Sharp U.S. Patent No. 3,017,756*. Claims 1-3, 9-12 and 14-16 were rejected under 35 U.S.C. 102(b) as being anticipated by *Smith et al. U.S. Patent No. 3,688,521*. Claims 1-3, 9-12 and 14-16 were rejected under 35 U.S.C. 102(b) as being anticipated by *Fisher U.S. Patent No. 3,822,570*. Claims 4 and 13



were rejected under 35 U.S.C. 103(a) as being unpatentable over any one of *Gees, Sharp, Smith et al.* and *Fisher*.

This rejection is respectfully traversed.

As set forth in new claim 17, Applicants' invention provides a fixed homokinetic joint including an inner hub, an outer hub, a carrier housing surrounding the outer hub, a plurality of tracks associated together in pairs provided in each of the inner hub and the outer hub, a plurality of balls received in the tracks, a cage guiding the balls to transfer a torque between the inner hub and the outer hub, and a sealing arrangement.

The sealing arrangement includes a bellows having a plurality of folds, a radially outer edge and a radially inner edge. The outer edge is coupled to the carrier housing and the inner edge is coupled to the inner hub with the crests of the folds which are located in a section between the outer edge and the inner edge running essentially in one plane located approximately perpendicular to an axis of an inner hub.

In this way, Applicants' invention provides a fixed homokinetic joint having a sealing arrangement which prevents the

penetration of foreign particles and the exit of lubricant even before its assembly on a shaft. With Applicants' fixed homokinetic joint, even at high speeds of rotation, inflation or bulging of the set of bellows cannot occur due to the arrangement set forth in claim 17.

Gees shows a displaceable (sliding) joint with the folds of the bellows being arranged in a plane which is parallel to the axis of the joint. *Fisher and Smith et al.* also disclose displaceable (sliding) joints. In addition, the bellows of these joints have one single fold only. The bellows of the *Sharp* joint likewise has only one single fold. Thus, none of the cited references discloses or suggests the special design of Applicants' fixed homokinetic joint as recited in new claim 17, which provides considerable advantages over known bellows as discussed at page 4 of Applicants' disclosure, wherein even at high speeds of rotation, inflation or bulging of the bellows is avoided.

Accordingly, it is respectfully submitted that new claim 17 together with claims 4 and 9-16, which depend directly or indirectly thereon, are patentable over the cited references.

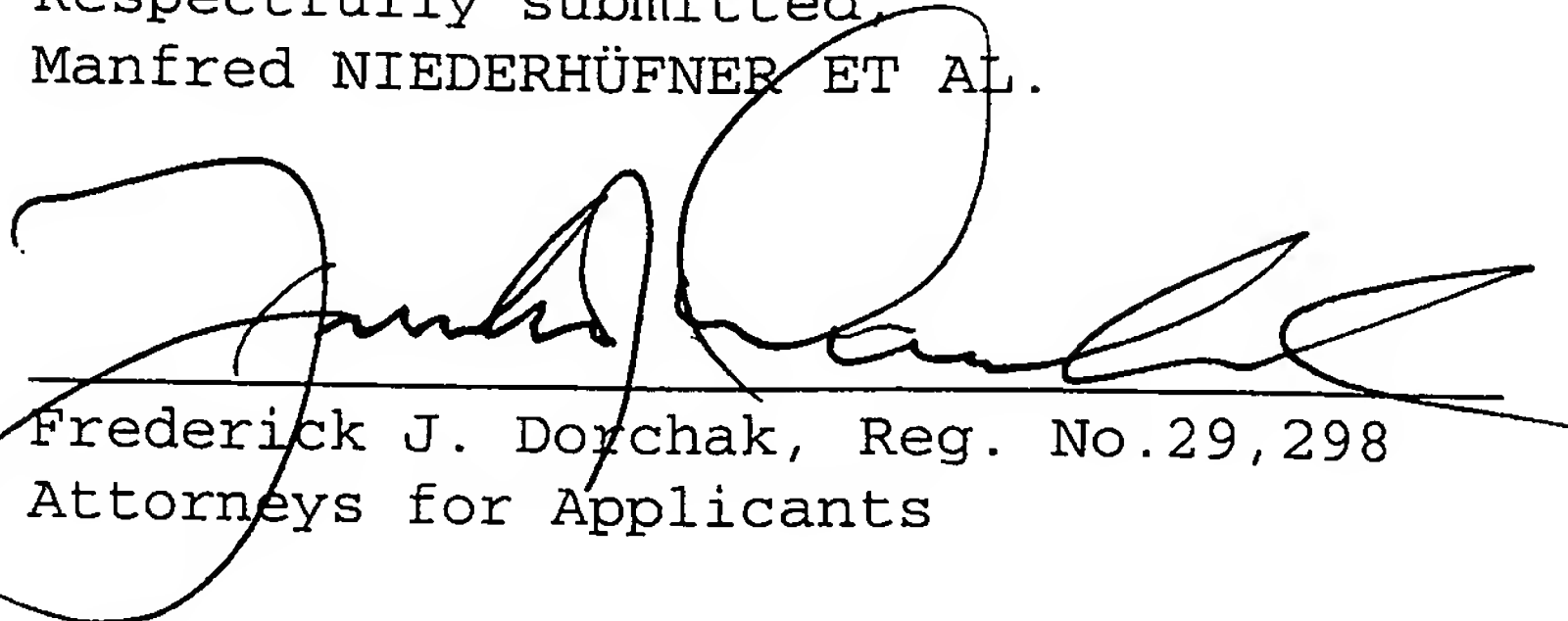
New claim 18 specifies a sealed joint assembly for use in a driveshaft of a motor vehicle, including a constant velocity joint, a sleeve which is firmly connected to the inner joint of the constant velocity joint and coaxially arranged thereto, and a sealing mechanism. The sealing mechanism includes an annular cap fixed to the outer joint part, a sealing diaphragm which, by an outer edge, is firmly connected to the sleeve, and a securing ring for fixing the inner collar on the sleeve. The sleeve includes a continuous annular groove which is engaged by the sealing diaphragm by an inner annular bead formed on the inner collar.

It is respectfully submitted that a sealed joint assembly having the structure set forth in new claim 18 is nowhere disclosed or suggested by any of the cited references. Therefore, it is respectfully submitted that new claim 18, together with claims 19-22 which depend thereon, are patentable over the cited references.

In summary, claims 1-3 and 5-8 have been canceled, claims 4 and 9-16 have been amended, and new claims 17-22 have been added. FIG. 1 has also been amended, and new FIGS. 3-8 have been added. The specification including the Abstract has also been amended.

In view of the foregoing, it is respectfully requested that the claims be allowed and that this case be passed to issue.

Respectfully submitted,  
Manfred NIEDERHÜFNER ET AL.

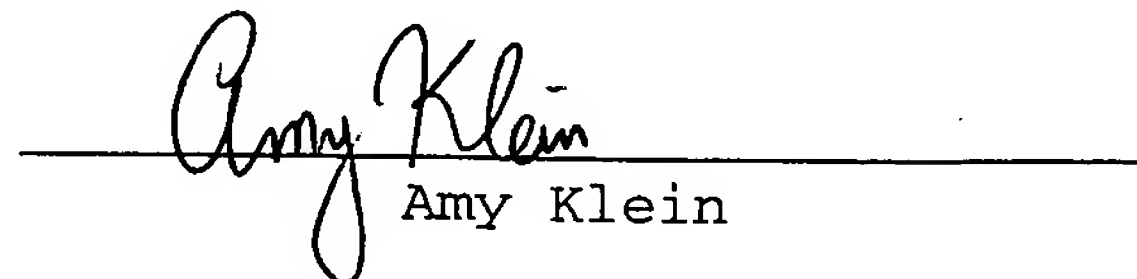


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Enclosures: Appendix - 1 replacement sheet and 3 new  
sheets of drawings  
Abstract  
German language description of the  
Shore-Hardness test

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on April 20, 2009.



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